

## **ADOT PROJECT TIME MANAGEMENT GUIDELINES**

### **WHAT'S NEW? – HIGHLIGHTS**

New features have been added to ADOT Project Time Management Guidelines:

- **Milestones and Flags**

Critical Milestones and Flags have been added to provide powerful reporting tools—see the APSR report format attached.

- **Target Schedules**

Within six weeks after kickoff, the original customized project schedule, approved by the project team, will be established as the Original Target or baseline schedule to track milestone progress and facilitate comparisons.

- **A New Report**

The Active Project Status Report (APSR) will include the milestone and flag dates to provide a more comprehensive report of project status. The initial report is to be in April 2000.

- **Schedule Update Request Form (SURF) Spreadsheet**

This tool is being introduced to streamline routine activity status schedule updates via e-mail.

- **Schedule Change Control**

Changes to logic or activity original duration are to be approved by the project team and documented in writing. If a project is reprogrammed to a different fiscal year, target stage dates and the bid advertisement date may be changed with team consensus. Other requested changes to bid or milestone dates will be done per the guidelines specified in the Project Development Process Manual.

- **Data Dates, Update Schedule and APSR Publication**

The data dates for schedule updates will be per the attached calendar. SURF updates or the schedule backup file are due to PPMS on the Friday data date by 5:00 p.m. The Active Project Status Report will be issued twelve times a year and will be available on the Internet approximately 3 to 4 working days after the final PM Review indicated on the APSR calendar.

- **Preliminary Five Milestone Schedule**

Prior to design kickoff, PPMS and the PM will provide a Preliminary Five-Milestone Schedule for the APSR including Scoping Complete, Start Design, Bid Advertisement, Award and Facilities Open to Traffic.

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### **WHAT'S THE SAME? – HIGHLIGHTS**

The ADOT scheduling standards previously presented have not changed:

- **Software**

The consultant should use a Primavera compatible scheduling product.

- **ADOT Calendar Requirement**

The calendar in the ADOT master schedule is to be used for all consultant schedules in order to reflect consistent date calculations.

- **Activity ID Structure**

The Activity ID numbering requirements previously specified still apply to Activity ID codes.

- **Activity Code Dictionary**

Consultants should use the ADOT Master Activity Code Dictionary which has not changed. Consultants should code Responsibility (RESP), Technical Leader (TCLD), Design Consultant Schedule Representative (DSNC), ADOT Project Manager (PMGR) and Critical Path Schedule ID Number (CPSN) as specified in the attached guidelines and leave the rest blank. Should the consultant need to modify the ADOT dictionary, contact PPMS to confirm compatibility with the ADOT master.

- **Customized Critical Path Method (CPM) Schedules**

Within six weeks after kickoff, customized schedules are to be developed in consultation with the project team members to meet the unique needs of each project.

- **Required Activities**

The previous requirements for Activities CS960 (C&S Reproduce Bid Package) and CS999 (Bid Advertise Date) have not changed. If the project is identified as a "Shelf Project," Activity CS998 (Shelf Project Date) should also be included.

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### **1. Purpose**

The purpose of this document is to provide ADOT design consultants with the information required to effectively communicate project schedules to ADOT's Program and Project Management Section (PPMS). PPMS collects the consultant schedules and incorporates them into the ADOT Master Schedule. Consistent data format and activity coding across schedules benefits ADOT's program tracking, delivery and resource management. Our goal has been to increase standardization for program reporting while maintaining flexibility for consultants to manage their work.

### **2. Select P3 Compatible Software**

The consultant should use a planning and scheduling software tool that is compatible with Primavera Project Planner (P3). Primavera and SureTrak are such tools which will facilitate seamless interface with the ADOT Master schedule.

Microsoft Project has limited compatibility with the ADOT scheduling system due to the fact that ADOT utilizes Activity ID numbers to code subproject, phase and stage. If the consultant submits a schedule in Microsoft Project format, the schedule must be configured to support the ADOT Master Schedule Activity ID coding requirements. It is required that consultants contact PPMS staff to coordinate this effort prior to preparing a schedule in Microsoft Project format.

### **3. Preliminary Project Milestone Schedule**

Prior to design kickoff, PPMS and the Project Manager will provide a Five-Milestone Schedule to be published in APSR. The five milestones include: Scoping Complete, Start Design, Bid Advertise Date, Bid Award, and Facilities Open to Traffic. The Preliminary Five Milestone Schedule will be developed in consultation with the pre-construction project manager after the project is programmed.

### **4. Create a Customized Project Schedule**

Within six weeks after the Design Kick-off Meeting, a customized Critical Path Method (CPM) schedule should be developed for each project representing the unique deliverables of the project scope. The level of schedule detail and the activities to be scheduled are to be determined by the project team.

Customized project schedules should meet the bid advertisement date as programmed and have the relevant milestones and flags outlined under Item 9 below. The schedule should include at least one activity for each involved ADOT discipline.

The consultant's customized schedule should include all activities required to advertise the project, whether the work is performed by ADOT, an outside agency or another subconsultant. In addition to design, the customized schedule should consider all pre-construction activities necessary to prepare the project for construction, including archaeological recovery, environmental mitigation, agency and tribal approvals, advance utility relocation, right of way acquisition, etc.

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### **5. Utilize ADOT Project Development Process Manual**

The ADOT Project Development Process Manual should be used as the basis for scheduling project activities by design stage. The expected levels of completion for each design stage are outlined in Section 5.6 of the Manual. Appendix B of the Process Manual summarizes stage requirements in checklist form.

Should the specific project requirements vary from the Project Development Process Manual, the project manager and technical leaders should approve deviations prior to incorporating in the project target schedule.

### **6. Confirm the schedule with Project Team Members**

The consultant scheduler should work directly with all project team members, to provide input to design schedule development including activities, logical relationships and estimated durations.

Should ADOT staff be performing a portion of the technical work, these activities should be clearly identified and confirmed with the responsible ADOT technical leader.

The responsible ADOT staff member should also confirm ADOT Environmental, Right-of-Way, and Utility activities. The requirement to code these activities to Responsible Area (RESP) and Technical Leader (TCLD) are discussed under items 12 and 13 below.

The consultant scheduler is responsible for confirming “buy-in” from all project team members for the original target schedule.

The consultant scheduler should also directly contact all project team members, including ADOT staff and outside agency staff, for timely, accurate schedule updates, confirming activity progress and remaining activity durations.

### **7. Use ADOT Base Calendar 1**

In order for date calculations to agree on the consultant’s software and the ADOT master schedule, the consultant should use the ADOT calendar. The calendar is provided in the project shell “CODES” or is available by calling any PPMS staff member.

The ADOT Base Calendar 1 is a standard Monday-through-Friday workweek with ADOT holidays. While the ADOT holidays may not be consistent with the consultant’s holiday schedule, if a different calendar is used, the calculations of target and current schedule dates will not agree. To facilitate comparisons, be sure to use the ADOT calendar.

### **8. Code Activity ID’s**

The structure of the Activity ID code is essential to organize program-wide information in the ADOT Master Schedule. ADOT uses the Activity ID to code Project ID, project phase and design stage. An understanding of the coding structure is necessary before assigning activity id numbers.

#### **8.a The Project ID.**

##### **Position 1 and 2:**

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Within the ADOT master schedule, the first two digits of the Activity ID refer to the Project ID. This two-digit code is assigned by PPMS and defines where in the ADOT database the project is to reside. The Project ID is alphanumeric and is placed in position 1 and 2 of the Activity ID code.

These two characters will probably not appear on the consultant's SureTrak and P3 schedule—they are controlled by the ADOT master.

### 8.b The Activity ID Code

The consultant is responsible for codes AFTER the Project ID code. The coding requirements are slightly different for Design and Pre Design schedules.

**The first character of the activity id code in position 3 indicates Phase:**

- 2 = Pre Design Phase
- 4 = Design Phase
- 6 = Construction Phase
- 7 = Maintenance Phase

Note: Numbers 1, 3, and 5 are not used

**The second character of the Pre Design Phase Code in position 4 indicates Pre Design Document:**

- A = Scoping
- B = PA
- C = DCR
- D = Feasibility Study

**The second character of the Design Phase Code in position 4 indicates Stage: The percentage is the old method.**

- 1 = Stage 1 (15%)
- 2 = Stage 2 (30%)
- 3 = Stage 3 (60%)
- 4 = Stage 4 (95%)
- 5 = Final Stage (100%)
- 6 = Multi Stage Activities

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**The third and fourth character of both the Pre Design and Design Code in position 5 & 6 indicate standard activities:**

- 00 = Project Coordination
- 01 = Defining Scope of Work.
- 02 = Request for survey/test/permits/clearance
- 03 = Design revise plans
- 04 = Selection of Consultants
- 05 = Not used
- 06 = Not used
- 07 = Review/Approve in-house reports, plans, specs & estimates.
- 08 = Review/Approve consultants reports, plans, specs & estimates.
- 09 = Rework to eliminate unsatisfactory performance.
- 25 = Perform materials testing
- 61 = Field Survey
- 71 = Mapping (AutoCAD)
- 81 = Field Survey (If a second trip is needed in another stage- this is not rework)
- 84 = Perform Value analysis.
- 91 = Consultant Contract Administration

Duplicates are not allowed in the project master schedule. Positions 7 through 10 are for sequencing the activities.

### Examples of Activity ID's:

4100	Design Phase Stage 1 Project Coordination
4103	Design Phase Stage 1 Design/Revise Plans
4208	Design Phase Stage 2 Review/Approve Consultant Rpts, Plans, PS&E
4203001	Design Phase Stage 2 / Step 1 or what the project requires
4203002	Design Phase Stage 2 / Step 2 or what the project requires

## 9. Include Relevant Milestones and Flags

The following standard Milestones and Flags should be included in project schedules as relevant. If the milestone does not apply to a project, it may be omitted.

The Activity ID codes of these Milestones and Flags must be coded exactly as listed. The Original Target dates for the Stages will be the Plan dates in the monthly Active Project Status Report (APSR). The regularly updated schedules will provide the Current and Actual dates in the APSR.

Milestones and flags both have zero original and remaining duration. A milestone represents a major event in a project, such as completion of pre design or a stage submittal. Several activities may be tied to a single milestone. Milestones have to be updated like any other activity. A flag signals the start or finish of an activity or group of activities. Flags are automatically updated in P3 or SureTrak when the predecessor is updated.

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The Milestones and Flags are to be coded as indicated below:

Activity ID	Activity Description	APSR Abbreviation	Activity Type
2AXPL	Pre Design Complete	PDC	Finish Milestone
41XES	Mapping and Survey Complete	Map/Srv	Finish Flag
40XPL	Late Start Design	LSD	Start Milestone
40XPL1	Project Start-Up/ Kick-off Meeting	Kick-off	Start Flag
41XPL	Design Stage I Complete	St I	Finish Milestone
42XGS	Geotechnical Test and Report Complete	GS	Finish Flag
42XVA	Value Analysis Complete	VA	Finish Flag
46XEP	Environmental Clearance	Env Clr	Finish Flag
42XPL	Design Stage II Complete	St II	Finish Milestone
43XPS	Material Memo Complete	M/M	Finish Flag
43XTD	Traffic Control Plan Complete	T/C pl	Finish Flag
46XRW	Right Of Way Clearance	R/W	Finish Flag
43XPL	Design Stage III Complete	St III	Finish Milestone
46XUR	Utility and/or Railroad Clearances	U/R Clr	Finish Flag
44XPL	Design Stage IV Complete	St IV	Finish Milestone
45XPL	Final PS&E Complete		Finish Flag
CS960	C&S Reproduce Bid Package		Task
CS999	Bid Advertise Date		Finish Milestone
CS998	Shelf Project Date (To be used only if it is a Shelf Project)		Finish Milestone
6XPL	Bid Award	B/A	Finish Milestone
7XPL	Facilities to be Open to Traffic	FOT	Finish Milestone

*(The Facilities to Be Open to Traffic date is driven by the number of contract working days for that project. PPMS will provide this information upon request.)*

**Note: Stage milestones are the date of the submittal to ADOT for review.**

### 10. Set the Bid Date Constraint on Activity CS999

The PRB Approved Bid Date should be shown as a **Mandatory Finish Constraint** on Activity CS999 – Bid Advertisement Date.

**The bid date constraint on Activity CS999 should not be changed prior to formal approval by PRB action.**

**Only PPMS staff may authorize a change to the bid date constraint on Schedule Activity CS999. Be certain to validate any bid date change prior to submitting a schedule with a different bid date.**

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### **11. Utilize the ADOT Activity Code Dictionary**

It is recommended that the consultant utilize the ADOT Master Schedule Activity Code Dictionary provided in the project shell schedule, "CODES."

Activity codes 1 through 4 must be structured identically with the ADOT Master Schedule. Do not modify the definitions of these first four fields--DSNC, PMGR, RESP or TCLD.

Should additions to the dictionary for DSNC, PMGR, RESP or TCLD be required, contact PPMS.

It is possible to modify the structure of the remaining activity codes in the ADOT dictionary if the consultant wishes to create different activity codes for their own internal purposes. Contact PPMS prior to changing the dictionary so that compatibility with the ADOT system can be maintained.

### **12. Code the RESP Responsible Area Activity Code.**

**RESP (Responsibility Code)** – The purpose of the RESP code is to identify which engineering discipline is responsible for the activity as well as whether the responsibility is by ADOT or the Consultant.

The RESP code field has a limit of 3 characters, with a 35-character description.

The first two characters of the RESP field designate the engineering discipline or functional area which will perform the work. The final (third) character of the RESP code is coded "C" to distinguish CONSULTANT responsibility rather than ADOT responsibility. Most ADOT responsibility codes leave the third character of the field BLANK.

The Responsible Area field is used to organize and report program wide information by technical area within ADOT, so it is particularly important to clearly identify activities for which ADOT retains technical responsibility. Examples of such activities in design consultant managed projects might include the Materials Memo or Geotechnical Investigations.

It is also critical that consultant schedulers clearly identify the ADOT Responsibility Codes for CLEARANCES, i.e. Environmental Clearance, Utility and Railroad Clearance, and Right-of-Way Clearance.

### **13. Code the TCLD Technical Leader Activity Code**

If the RESP Responsible Area is ADOT, it is essential to code the TCLD, the ADOT Technical Leader.

The TCLD code identifies the ADOT technical leader who is responsible for the deliverable of the activity. This code is used to organize and direct information to ADOT technical leaders and managers.

Activities related to CLEARANCES, including Environmental, Right-of-Way and Utility clearances, should identify the ADOT technical leader responsible for the clearance.

The TCLD field has a limit of 3 characters. The first two characters are the first and last initial of the ADOT technical leader with the third character as a sequence number. The description is 35 characters long and should include the person's first and last name and their extension number.



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If the ADOT technical leader you are looking for is not in the dictionary, contact PPMS to have them added to the ADOT Master dictionary.

**Note: The TCLD field is only for the ADOT technical leader. If the Consultant or one of their subcontractors is actually doing the work, the TCLD field should be left blank. If the ADOT technical leader is utilizing an On-Call Consultant to do the work, code the ADOT technical leader in this field.**

**Do not attempt to code the consultant's technical leader in this field. Should you wish to code Consultant technical leaders, contact PPMS in order to modify your activity code structure for this purpose and still maintain compatibility with the ADOT master.**

### **14. Code the DSNC - Design Consultant Schedule Representative Activity Code**

The meaning of the DSNC code has changed slightly. This field should identify the consultant company and the person who is responsible for preparing and updating the project schedule. The DSNC field is five characters long. The first two digits indicate the design firm abbreviation and the remaining three digits are unique for each scheduler, usually the first and last initials followed by a sequence number. The field description is 35 characters and should include both the firm name and the person's name.

The Schedule Update Request Form (SURF) will be e-mailed to the individual coded in this DSNC field. Identify the e-mail address of the person responsible for the schedule with the first schedule submittal. If the consultant's schedule representative is not in the dictionary, contact PPMS staff to obtain the correct 5-digit DSNC code, which will be added to the ADOT Master Schedule Dictionary. Do not add codes to the dictionary without confirming the code with PPMS.

### **15. Code the PMGR - Project Manager Activity Code**

The design consultant should code the ADOT Project Manager code on all schedule activities. The PMGR code is three characters long, the first and last initial of the ADOT manager followed by a sequence number. The code description is 35 characters long and includes the manager's first and last name followed by the telephone extension number.

Do not code the consultant project manager in the PMGR field. If the ADOT manager is not listed in the dictionary, call PPMS to establish the code, do not create one independently.

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### **16. Code the CPSN - Critical Path Schedule ID Activity Code**

The CPSN (CPS ID, Critical Path Schedule ID) is a unique identifier that PPMS assigns to each project. Each activity in the schedule will be populated with the appropriate CPSN for the project.

Consultant should ensure that all target schedules, updates, inquiries, e-mail, or correspondence concerning the project schedule should clearly display the 4-digit CPSN code assigned by PPMS.

### **17. Establish the Project Target Schedule**

The Project Target schedule should be established within six weeks of the project kickoff meeting. After preparing the draft project schedule, the consultant should obtain final approval of the project team members. Each technical leader should confirm activities, logical relationships, estimated durations, and milestone dates. Any necessary adjustments or corrections should be confirmed with the team and project manager.

After team approval and before any updating, the original schedule should be saved as the Target Plan. A schedule backup should be forwarded on disk or via e-mail to ADOT PPMS for review. The schedule will be checked for compatibility with the ADOT Master Project. Those projects not complete or incompatible with the ADOT Master schedule will be returned to the Project Manager and consultant for revision.

The corrected schedule will be established as the original Target schedule for comparison purposes in the Active Project Status Report (APSR). Progress will be compared to these Target dates throughout the project. Changes to these dates are outlined under Section 25 below.

Before updating a schedule for the first time, it is recommended that the Consultant also save the Target schedule as a convenient tool for comparison purposes. As the project progresses, use the target as a benchmark or baseline for comparing the target dates, to the current schedule. The consultant should provide the ADOT project manager and team members with layouts showing the Current and Target schedules to facilitate quick variance analysis and corrective action. For assistance in establishing the target or developing target layouts, contact any PPMS scheduler.

For projects which are currently on-going, the Target dates will be established the first month the consultant submits a schedule with the Milestones and Flags to be reported in the APSR.

### **18. Data Dates and the Update Due Dates**

The APSR process is linked to the ADOT Biweekly Time Sheet (BTS) Calendar instead of the calendar month. Updates will be required every four to six weeks per the attached APSR Calendar. Note that the data date is the day the schedule update is due to PPMS and is the last day updates will be accommodated. Early updates will be accepted, however the data dates must be consistent with the APSR calendar. Do not submit updates with any data dates other than those specified on the APSR calendar.

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### 19. Choose Method to Transmit Schedule Update

There are two methods to transmit updated schedules, depending on the complexity of the update and the preference of the scheduler.

- **The SURF Spreadsheet**

The Schedule Update Request Form (SURF) was designed to quickly and easily transmit **Activity Status** Updates to PPMS via e-mail.

The SURF spreadsheet is a good update tool to use if there are only changes to activity remaining duration, start dates and finish dates.

The SURF spreadsheet is also intended as a useful tool for small projects with few activities to quickly status stage dates and clearances.

A sample SURF spreadsheet is included at the back of these Guidelines.

- **Schedule Backup**

If there are changes to logic, original duration, activity codes, addition or deletion of activities, do not use SURF, submit a schedule backup as outlined below.

A schedule backup will be accepted for any project if preferred.

### 20. The SURF Spreadsheet Update

PPMS will e-mail the Schedule Update Request Form (SURF) to the consultant project scheduler on the Monday preceding the Friday data date.

Activity status should be confirmed with individual technical leaders performing the work, both the consultant staff and ADOT staff as well as outside agencies.

For activities underway, record the date each activity actually started and its remaining duration. When an activity is complete, record the actual finish date. Updates on the SURF spreadsheet should also be input into the consultant's schedule if you wish to review the current calculation of the milestones and flags which will appear in the APSR.

### 21. Schedule Backup Update

The same update process outlined above should be followed to obtain activity status from technical staff, actual starts and finishes and remaining duration.

The project team should approve changes to logic, original duration, activity codes, as well as the addition or deletion of activities. These changes should also be documented in writing on the schedule transmittal to PPMS and copied to the Project Manager.

Once the schedule update is finalized, save in the Concentric P3 format and send either via e-mail or diskette to PPMS. This transmittal method may also be selected for regular updates if consultant prefers not to utilize the SURF Spreadsheet.

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### **22. ADOT PM Reviews Updated Schedule Prior to APSR Publication**

The Monday morning following the data date, PPMS will input the SURF information or backed up schedule file into the ADOT master schedule.

By Tuesday morning, all updates will be available for review by the ADOT Project Manager on the PM Report. A copy of the PM report layout is attached to these guidelines.

The PM Report is a comprehensive, detailed view of one project. The ADOT PM should use this as a final review point before the milestone/flag dates and other information is published in the monthly APSR report.

The PM Report is also used to input the PM comments.

The PM may find it necessary to contact team members and the consultant scheduler to correct the schedule information. Any changes should be coordinated with the project team via phone, e-mail or meeting. Should the PM require changes, it is the PM's responsibility to follow up with the consultant scheduler to confirm if the consultant will resubmit a revised schedule.

If the PM makes changes directly in the AODT Master schedule, the consultant should follow up to assure their schedule is consistent with the ADOT Master Schedule.

### **23. Communicate with the Project Team and Manage the Schedule**

The consultant project scheduler should communicate current schedule updates to the Project Team on a regular basis. Use the Target and current schedule to improve communication among all project participants and assure project success. Distribute easily understood reports and barcharts to show the project team what is happening.

The team should use the project schedule as a tool to determine if a schedule change is needed as soon as possible in order to take corrective action. Focus on critical activities, resources, slippages, and identify required future progress.

### **24. The Active Project Status Report - APSR**

The Active Project Status Report (APSR) will be published every four to six weeks according to the attached calendar. A sample of the APSR format and a calendar for publication is included at the end of these guidelines.

The APSR will be available on the Internet approximately 3 to 4 workdays following the final PM updates, i.e. the second Thursday or Friday following the data date. Existing reports with the same information will be eventually be phased out.

### **25. Schedule Change Control**

Schedule changes such as logic changes or duration changes that do not change the Target/Baseline Bid Advertisement date or milestone dates can be made with the approval of the Project Team and Project Manager. The changes should be documented in writing and require a resubmittal of a schedule backup file to PPMS.

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When a project is reprogrammed to a different fiscal year, the project team may reschedule the Advertisement Bid date and Target milestone dates and these dates will replace the original target dates.

Should there be significant changes to the project which impact the project schedule, revisions to the target milestones will be considered on a case by case basis.

The project team should go to the PRB as soon as a project bid advertisement change is anticipated, as early in the project development process as possible, so that management action can be taken.

### 26. Scheduling Assistance

PPMS staff are available for assistance in developing schedules or answering questions.

PPMS Main Number: 602-712-7678

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